

INTISARI

Gerakan tanah merupakan salah satu bencana alam yang sering terjadi di Indonesia, khususnya pada daerah perbukitan tinggi selama musim hujan. Desa Batur dan sekitarnya yang berada di Kecamatan Getasan, Kabupaten Semarang merupakan salah satu daerah dengan tingkat kerentanan gerakan tanah yang tinggi. Penelitian ini bertujuan untuk mengetahui kondisi geologi dan membuat zonasi kerentanan gerakan tanah daerah penelitian. Metode yang digunakan adalah metode *weight of evidence* (WoE) dengan parameter berupa kemiringan lereng, litologi dan tingkat pelapukan, jarak terhadap kelurusan, jarak terhadap sungai, dan tata guna lahan. Pengambilan data dilakukan pada bulan Januari 2024 dan diperoleh data kejadian gerakan tanah sebanyak 48 titik. Setiap parameter dibagi menjadi kelas – kelas yang akan dilakukan pembobotan, kemudian dilakukan tumpang tindih (*overlay*) untuk menghasilkan peta zona kerentanan gerakan tanah yang akan dilakukan validasi terhadap model (*success rate curve* atau SRC) dan prediksi (*prediction rate curve* atau PRC) dengan menggunakan perhitungan *area under curve* (AUC). Berdasarkan hasil penelitian, geomorfologi daerah penelitian terbagi menjadi dua satuan, yaitu satuan perbukitan tinggi gunungapi berlereng curam dan satuan perbukitan tinggi gunungapi berlereng agak curam. Litologi daerah penelitian dikelompokkan menjadi dua satuan batuan, yaitu satuan lava andesit dan satuan breksi andesit. Terdapat struktur geologi di daerah penelitian berupa kekar gerus dengan arah gaya utama relatif barat daya – timur laut. Berdasarkan hasil pembobotan *weight of evidence*, zonasi kerentanan gerakan tanah daerah penelitian terbagi menjadi 4 zona, yaitu zona kerentanan sangat rendah, zona kerentanan rendah, zona kerentanan menengah, dan zona kerentanan tinggi. Hasil perhitungan validasi menunjukkan bahwa model peta zona kerentanan gerakan tanah yang diperoleh memiliki nilai AUC sebesar 0,760 tergolong baik dan nilai 0,775 pada prediksi gerakan tanah tergolong baik.

Kata Kunci : Getasan, gerakan tanah, *weight of evidence*



ABSTRACT

Land movement is one of the natural disasters that often occurs in Indonesia, especially in high hilly areas during the rainy season. Batur Village and its surroundings in Getasan District, Semarang Regency are one of the areas with a high level of vulnerability to ground movement. This research aims to determine geological conditions and zone the vulnerability of land movements in the research area. The method used is the weight of evidence (WoE) method with parameters in the form of slope slope, lithology and level of weathering, distance to alignment, distance to rivers, and land use. Data collection was carried out in January 2024 and data on ground movement events was obtained for 48 points. Each parameter is divided into classes which will be weighted, then overlaid to produce a map of ground movement vulnerability zones which will be validated against the model (success rate curve or SRC) and predictions (prediction rate curve or PRC) using area under curve (AUC) calculation. Based on the research results, the geomorphology of the research area is divided into two units, namely the high volcanic hills unit with steep slopes and the high volcanic hills unit with slightly steep slopes. The lithology of the research area is grouped into two rock units, namely the andesite lava unit and the andesite breccia unit. There is a geological structure in the research area in the form of scour joints with the main force direction being relatively southwest – northeast. Based on the results of the weight of evidence, the ground movement vulnerability zoning in the research area is divided into 4 zones, namely the very low vulnerability zone, the low vulnerability zone, the medium vulnerability zone, and the high vulnerability zone. The results of the validation calculations show that the ground motion vulnerability zone map model obtained has an AUC value of 0,760 which is considered good and a value of 0,775 for predicting ground motion is considered good.

Keywords: Getasan, ground movement, weight of evidence

